

**Oral History Program: Biographical Notes**

**A.H. (Harry) FREEMAN (1921 - )**  
**Communications Engineer**

- Birth & Family:** Born 26 March 1921 in Sunderland, County Durham, England. Family emigrated to Australia in 1925. Father originally a motor mechanic, later worked as a mechanic on Sydney North telephone exchange.
- Education:** Attended Woollahra Primary School and Sydney Technical High School; attained Leaving Certificate in 1937.
- Qualifications:** *Can we find out? Looks like Diploma of Elec Eng.*
- Memberships:** FIEAust.
- Awards:**
- Work History:** In 1938 Freeman commenced employment as Cadet Draftsman, Postmaster General's Department, Sydney, where he worked in the Drawing Office; general duties included assisting Survey Draftsman in the preparation of maps of Newcastle, and working in the Cable and Conduit Section recording cable ducts. Studied at Departmental Training School, subjects included half of those involved in a Technical College Electrical *Engineering?* Diploma, as well as Departmental subjects.
- In 1942 Freeman was in the last year of his five-year cadetship, having already completed the academic side, when he joined the RAAF in response to an advertisement seeking people with tertiary qualifications for unspecified special radio work; this allowed him to become an officer after six months' training. He worked in the new technology of radar and after 12 months' training at Sydney University and the Radar School at Richmond, NSW, was posted to Mascot in Sydney to set up the 46<sup>th</sup> Radio Direction Finding Station; later posted to Darwin in 1943 where he plotted Japanese aircraft raids. During this time Freeman was one of a team of four posted to Cape Don on the Cobourg Peninsular in the Northern Territory to set up a radar station.
- In 1944 Freeman was posted to Caloundra, Qld. During this year he also passed the last subject in the Open Engineers' Examination.
- After the war, Freeman returned briefly to his former position in the Drawing Office, and was then promoted to Engineer in the Buildings Division, which co-ordinated the engineering aspects of post-war reconstruction plans in terms of buildings.
- In 1947, following internal departmental restructuring, Freeman became Engineer and Divisional Engineer in the radio transmission section, involved in the location of sites for new transmitters, as well as installation and maintenance of equipment. He was responsible for ABC broadcasting in NSW, the provision of ABC studio equipment and studio operators, and also the section dealing with radiotelephony for microwave radar and radio. During this period he also took part in early investigations on use of VHF equipment.

In 1955, following bad floods it was decided to set up emergency radio lines, Northern Rivers Flood Emergency System; Freeman became responsible for Radio Trunks. He was also involved in the initial stages of television broadcasting, and the selection of the Gore Hill site and suitable equipment for the ABC to commence television transmission.

Freeman moved to the Transmission Section in 1958 as Divisional/Supervising Engineer, his main responsibility being the planning of the extension of the trunk line network. Other duties involved providing new carrier systems, measurement procedures and techniques, testing capacity balances.

In the late 1950's a move was made to replace the step-by-step telephone switching system with more up to date crossbar switching/transmission equipment. Freeman was a junior member of the ANSO committee which was formed to study the problems of multi-metering or STD (Subscribed Trunk Dialling) and to specify equipment needs for next 20-30 years. During this period he worked on a computer program to help plan the introduction of crossbar, and was also involved in designing the way the crossbar interacted, as well as the transmissions aspect.

In 1965 Freeman became Supervising Engineer for Transmission Planning. During this time the introduction of coaxial cables made rapid growth in traffic possible.

Freeman became the Supervising Engineer, Trunk Service and Telegraphs in 1970. Trunk Service provided specialist expertise to the country Divisional Engineers on the carrier equipment and long line equipment generally. Telegraph work for the Department of Foreign Affairs also came under Freeman's responsibility as did data transfer technology. During this period data transmission grew rapidly.

From 1975-1981 Freeman was Supervising Engineer Transmission and Lines Planning, Country. Responsibilities were the planning and laying of cables and planning transmission aspects of long line circuits in country areas. During this period he spent a year as a member of a study group looking at the introduction of AXE (Automatic Crossbar Exchange). In the late 1970's large trunk switching exchanges required new equipment to replace crossbar. The concept of using transistors as switches was introduced, making it possible to build exchanges which had greater capacity and flexibility, but which were smaller in actual physical size.

Another complete network change became necessary when Ericsson's equipment was chosen, and crossbar phased out almost completely. Freeman took part in the tandem study held in Melbourne, which set the pattern for the next generation of equipment and implied the future importance of optical fibres, which were to provide improvement in speech quality due to digital transmission.

Freeman retired in 1981.

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Prepared by Jill Willis, September 2003 from oral history interview conducted by ?? on 3.12.1998.